What is claimed is:

1. A light source apparatus for providing illuminating light to an endoscope, comprising:

a light source lamp for generating illuminating light;

a reflection mirror which receives and reflects the illuminating light generated by the light source lamp;

a light-converging optical system for directing the illuminating light reflected by the reflection mirror to be incident on an illuminating-light transmission optical system integrated in the endoscope; and

a mirror control circuit which determines whether or not the illuminating light should impinge on the illuminating-light transmission optical system integrated in the endoscope by altering the direction of the illuminating light reflected by the reflection mirror based on an exposure-time control signal introduced in accordance with the type of an imaging element installed in the endoscope.

2. A light source apparatus of claim 1 wherein:

the mirror control circuit controls the supply of illuminating light to the illuminating-light transmission optical system by altering the direction of the illuminating light reflected by the reflection mirror, based on the exposure-time control signal introduced in accordance with a

time required for charge reading corresponding with the number of pixels of the imaging element installed in the endoscope.

3. A light source apparatus of claim 2 wherein:

the mirror control circuit controls the reflection mirror based on a read-out timing of the imaging element provided by a timing generator which provides a processing timing in synchronization with the charge reading time corresponding to the number of pixels of the imaging element.

4. A light source apparatus of claim 1 wherein the reflection mirror comprises:

a device for switching between incidence and non-incidence which controls the supply of the illuminating light to the illuminating-light transmission optical system by switching between the incidence and non-incidence of the illuminating light generated by the light source lamp on the illuminating-light transmission optical system introduced in the endoscope; and

a mirror which reflects an incident light component out of light reflected by the device for switching between incidence and non-incidence towards the illuminating-light transmission optical system introduced in the endoscope.

5. A light source apparatus of claim 4 further comprising:

driving means which determines the incidence or non-incidence of the illuminating light on the illuminating-light transmission optical system introduced in the endoscope by driving the device for switching between incidence and non-incidence.

6. A light source apparatus of claim 1 wherein:

a light integrating device for uniformly integrating the reflected light is inserted between the reflection mirror and the light-converging optical system.

7. A light source apparatus of claim 4 wherein:

the device for switching between incidence and non-incidence, which controls the supply of illuminating light to the illuminating-light transmission optical system, determines the incidence or non-incidence of illuminating light by arranging a matrix of a specified number of micromirrors each supported by a support member on a yoke which moves about between two stable states with one diagonal line as a pivot, so that the micromirrors can be moved in a horizontal direction within a specified angular range independently of each other.

8. A light source apparatus of claim 1 wherein:

an optical filter is introduced such that it periodically intercepts a light path between the reflection mirror and the light-converging optical system to allow, out of the illuminating light, light components with a limited range of wavelengths to pass through.

9. A light source apparatus of claim 8 wherein:

the optical filter is a rotational filter obtained by arranging a plurality of sectors around the center, each defining a region which can filter light components with a specified range of wavelengths.

10. A light source apparatus of claim 8 wherein:

the mirror control circuit controls the supply of illuminating light to the illuminating-light transmission optical system by altering the direction of illuminating light reflected by the reflection mirror based on the exposure-time control signal introduced in accordance with a time required for charge reading corresponding to the number of pixels of the imaging element installed in the endoscope, the control comprising reducing a time for light shielding when the number of pixels of the imaging element is so small that charge reading will be completed in a short time, and extending the time for light shielding when the number of pixels of the imaging element is so large that charge

reading will take a long time.

11. An endoscope system for enabling endoscopic observation by providing illuminating light to an endoscope, comprising:

a light source lamp for generating illuminating light;

a reflection mirror which receives and reflects the illuminating light generated by the light source lamp;

an illuminating-light transmission optical system which is capable of transmitting illuminating light and which is installed in the endoscope;

a light-converging optical system for directing the illuminating light reflected by the reflection mirror to be incident on the illuminating-light transmission optical system;

an imaging element installed in the endoscope;

a type determining circuit for determining the type of the imaging element;

a control signal generating circuit which generates an exposure-time control signal responsible for controlling the exposure time of the imaging element in accordance with the type of the imaging element determined by the type determining circuit; and

a mirror control circuit which determines whether or not the illuminating light should impinge on the illuminating-light transmission optical system introduced in

the endoscope by altering the direction of the illuminating light reflected by the reflection mirror based on the exposure-time control signal generated by the control signal generating circuit.

12. An endoscope system of claim 11 wherein:

the imaging element is installed within the tip of an insertion segment of the endoscope.

13. An endoscope system of claim 11 wherein:

the type determining circuit for determining the type of imaging element determines the type of imaging element installed in the endoscope and detects the time required by the imaging element for charge reading.

14. An endoscope system of claim 13 wherein:

the mirror control circuit determines whether or not the illuminating light should impinge on the illuminating-light transmission optical system by altering the direction of the illuminating light reflected by the reflection mirror based on the exposure-time control signal introduced in accordance with a charge reading time corresponding to the number of pixels of the imaging element detected by the type determining circuit.

15. An endoscope system of claim 13 wherein:

the mirror control circuit controls the reflection mirror based on an imaging element read-out timing provided by a timing generator which provides a processing timing in synchronization with the charge reading time corresponding to the number of pixels of the imaging element.

16. A light source apparatus of claim 11 wherein the reflection mirror comprises:

a device for switching between incidence and non-incidence which controls the supply of the illuminating light to the illuminating-light transmission optical system by switching between incidence and non-incidence of the illuminating light generated by the light source lamp on the illuminating-light transmission optical system introduced in the endoscope; and

a mirror which reflects an incident light component out of light reflected by the device for switching between incidence and non-incidence towards the illuminating light transmission optical system introduced in the endoscope.

17. An endoscope system of claim 16 wherein:

the device for switching between incidence and non-incidence determines whether or not the illuminating light should impinge on the mirror by arranging a matrix of

specified number of micromirrors, each supported by a support member on a yoke which moves between two stable states with one diagonal line as a pivot, so that the micromirrors can be moved in a horizontal direction within a specified angular range independently of each other.

18. An endoscope system of claim 11 wherein:

an optical filter is introduced such that the optical filter periodically intercepts a light path between the reflection mirror and the light-converging optical system to control the passage of illuminating light, thereby allowing light components with a specified wavelength to pass through.

19. An endoscope system of claim 18 wherein:

the mirror control circuit controls the supply of illuminating light to the illuminating-light transmission optical system by altering the direction of the illuminating light reflected by the reflection mirror based on the exposure-time control signal introduced in accordance with a time required for charge reading corresponding to the number of pixels of the imaging element installed in the endoscope, the control comprising reducing a time for light shielding when the number of pixels of the imaging element is so small that charge reading will be completed in a short time, and extending the time for light shielding when the number of

pixels of the imaging element is so large that charge reading will take a long time.